Nuclear and Particle Physics Directorate
Strategic Planning Retreat

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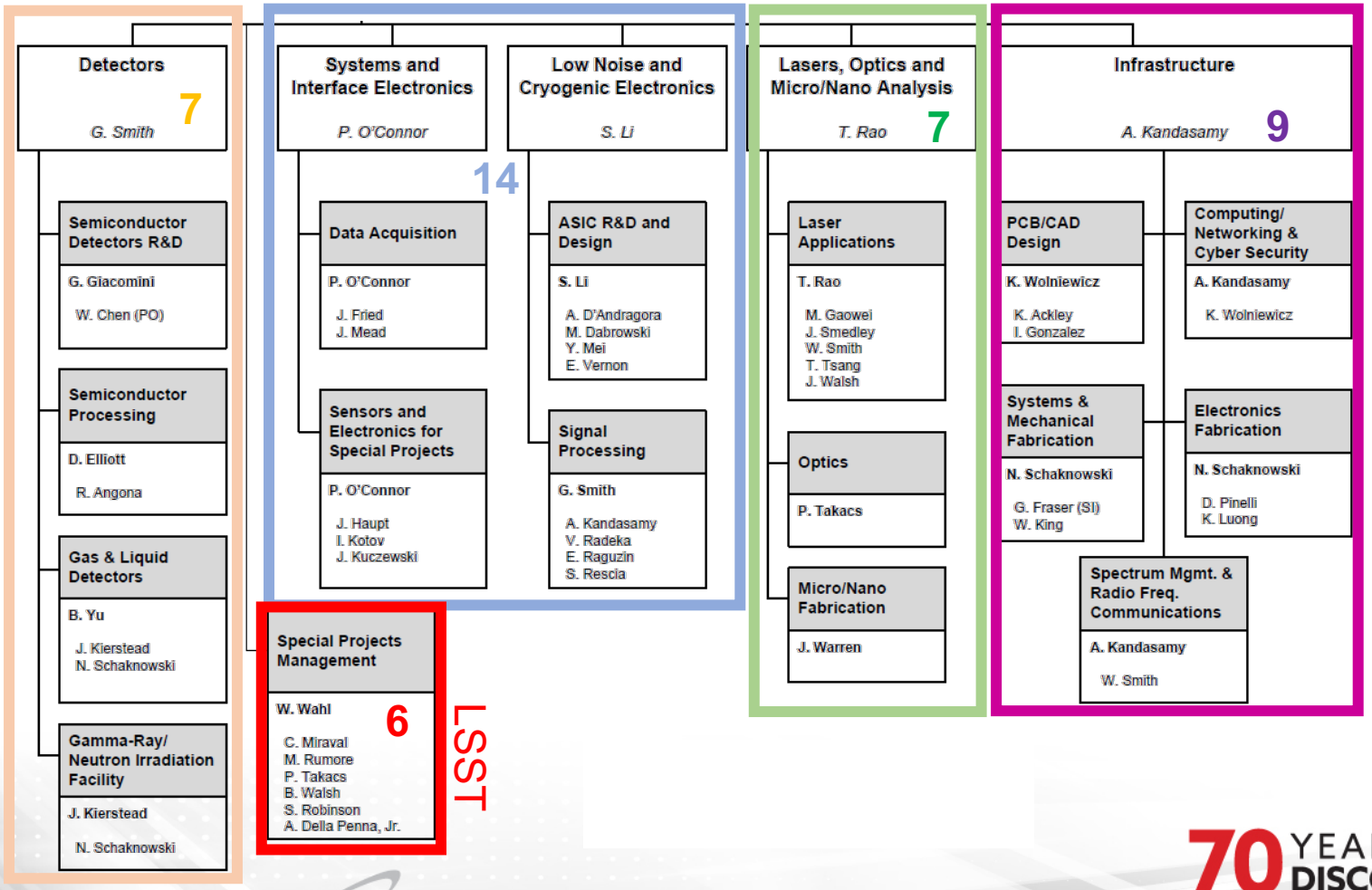
70 YEARS OF DISCOVERY
A CENTURY OF SERVICE

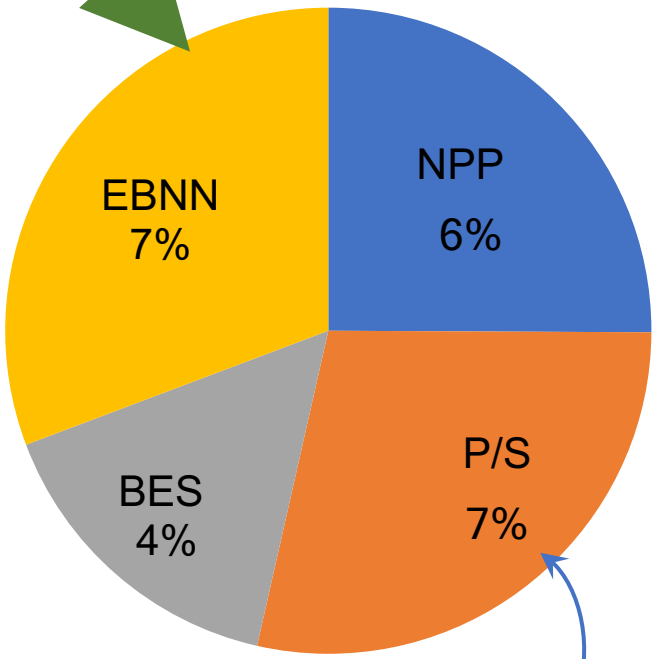
U.S. DEPARTMENT OF ENERGY
BROOKHAVEN NATIONAL LABORATORY

IO Organization: Science and Technology



IO Scope of Work

- Projects
- **Technology R&D**
- SPP/OFA/NFA
- LDRD
- Supporting infrastructure



IO indirect / Directorate's G&A

IO Internal Strengths

Capability	Technology Infrastructure
Si Detectors	Class 10-100 Si-detector fabrication facility
Noble Liquid and Gas Detectors	Detector simulation tools (Si, gas, liquid)
Diamond Detectors	Microelectronics design tools (ASIC + PCB)
Neutron Detectors	Electronics fabrication
Low Noise Signal Processing	Wire bonding and Bump bonding (ASIC dies, Si-detectors, detector assemblies)
ASIC design	Ball grid assembly (BGA) tools and micro-component assembly
High-Speed Data Acquisition	X-ray fluorescence electron microscope, detector and ASICs diagnostics
Photo-Cathodes	Laser infrastructure for cathode development and ultra fast optical diagnostics
Ultra-Fast Systems	
Optics	
Extreme and UHV Systems	

Business Plan

Operations

- Prioritize projects in consultation with ALD
- Establish a graded, risk based Program Management Model
- Hire dedicated Planning and Development Person to identify opportunities
- Establish periodic transitional plan to support identified growth areas

Funding

- Base level funding to cover operational costs
- Direct support from funded programs based on Program Management Model Estimate
- Floating support to meet the priorities established in the transitional plan (growth areas)

Incentive structure

- Encourage development of growth opportunities

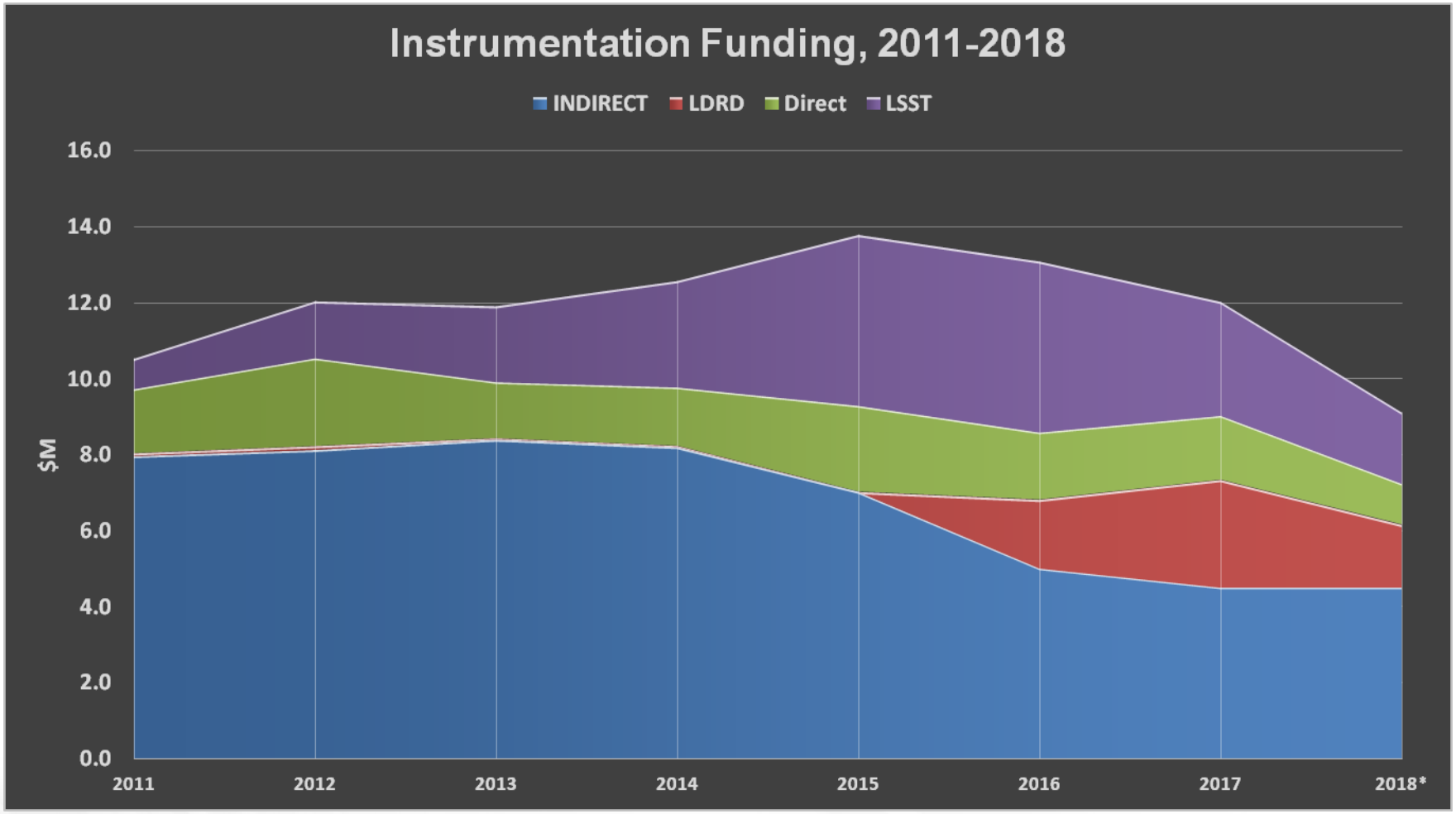
IO Anticipated Growth Areas

- Projects ramping up: sPHENIX, HL-LHC, LBNF/DUNE
- LDRD follow-on
- External partnerships

FY16 statistics: proposals awarded (submitted)

Directorate	FWP	OFA	NFA/SPP	LDRD	TOTAL
NPP			1 (3)	2 (2)	3 (5)
EPS	2 (2)		3 (4)	0 (3)	5 (9)
EBNN		3 (3)	2 (3)	1 (1)	6 (7)
TOTAL	2 (2)	3 (3)	6 (10)	3 (6)	14 (21)
				Overall Success Rate:	67%

Funding


Instrumentation Funding, 2011-2018
INDIRECT
LDRD
Direct
LSST
$M
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
2011
2012
2013
2014
2015
2016
2017
2018*

Key Concerns/Issues

- Retain and enhance expertise in selected instrumentation technologies
- Transition to new funding model
- Implement program management structures
- Tech. staff retention and recruitment